Amended Claims 1 - 13

1. A travelling field machine with a stator (10) and a rotor, each of which comprising at least one stator coil (14) or one rotor coil, respectively, with
- the stator (10) or the rotor, respectively, comprising a soft magnetic iron body with a stator back (10a) or rotor back, respectively, in which spaced grooves (16) are formed, generating teeth (18), and
- the stator coils (14) or rotor coils, respectively, comprising conductor bars (20) arranged in the grooves (16) of the stator (10) or the rotor, respectively, and end windings (22) arranged at the end faces of the stator (10) or the rotor, respectively, which connect the conductor bars (20), which are connected with the conductor bars (20) in an electrically conductive manner in order to electrically connect conductor bars in spaced grooves (16), with
- the end windings (22) forming a stacked packet (25) from which at least one thermally conductive element (28) is protruding which extends to a heat sink (30),
- characterised in that each end winding (22) has an essentially parallel orientation relative to the end face of the stator or rotor, respectively, and is formed from an essentially plane thin sheet which in its radial extension relative to the longitudinal centre axis of the stator (10) or the rotor, respectively extends from the relevant conductor bar (20) approximately to the or into the, respectively, heat sink (30),
- with the heat sink being formed by annular elements (30a, 30b) which are concentric to the longitudinal centre axis of the stator (10) or the rotor, respectively, which together with the thermally conductive elements (28) define a channel for heat dissipating fluid, and with neighbouring annular elements each accommodating thermally conductive elements (28) between them.

2. The travelling field machine according to Claim 1, wherein
- the thermally conductive element (28) is in a thermal (surface) area contact with at least one of the end windings (22) or protrudes from same as an extension of the thermally conductive element (28) in order to make a thermal connection with the heat sink.

3. The travelling field machine according to Claim 1, wherein
- each thermally conductive element (28) extends into the heat sink (30) or is connected with its outer wall (30a, 30b) in a thermally conductive manner.

4. The travelling field machine according to one of the previous claims, wherein
- the heat sink (30) is a fluid cooling means arranged coaxially to the conductor bars (20).

5. The travelling field machine according to one of the previous claims, wherein

- each of the end windings (22) formed from an essentially plane thin sheet is oriented either essentially transversely or essentially tangentially relative to the longitudinal centre axis of the stator (10) or the rotor, respectively.

6. The travelling field machine according to one of the previous claims, wherein
- the conductor bar (20) comprises a pin (20a) each at its ends, which engages a recess (22b) at the end of the end winding (22) in order to make an electrically conductive connection with same.

7. The travelling field machine according to one of the previous claims, wherein
- the electrically conductive connection is made by electric impulse welding.

8. The travelling field machine according to one of the previous claims, wherein
- the ends of the end windings (22) are joined with the ends of the conductor bar (20) by laser welding in an electrically conductive manner.

9. The travelling field machine according to one of the previous claims, wherein
- the conductor bar (20) and/or the end winding (22) are provided with a ceramic or enamel coating.

10. The travelling field machine according to the one of the previous claims, wherein
- the wall sections (30a, 30b) of the heat sink (30) are joined with the thermally conductive elements (28) by brazing, welding, adhesive bonding, or otherwise joined so as to be fluid tight and essentially dimensionally stable.

11. The travelling field machine according to one of the previous claims, wherein
- the wall sections (30a, 30b) of the heat sink (30) and the thermally conductive elements (28) are made from copper, aluminium, or other thermally conductive materials.

12. The travelling field machine according to one of the previous claims, wherein
- the heat sink (30) for the end windings (22) is connected with a heat sink (40) for the stator (10) or the rotor, respectively, via at least one passage (42) in a fluid conducting manner.

13. The travelling field machine according to one of the previous claims, wherein
- the heat sink for the stator (10) or the rotor, respectively, is arranged at its back (10a).